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CERTIFICATE

This certificate is issued in support of an application for Patent registration in a country outside New Zealand pursuant to the Patents Act 1953 and the Regulations thereunder.

I hereby certify that annexed is a true copy of the Provisional Specification as filed on 6 December 2002 with an application for Letters Patent number 523072 made by BARRY DOUGLAS ARMOUR.

Dated 5 November 2003.



Neville Harris
Commissioner of Patents, Trade Marks and Designs

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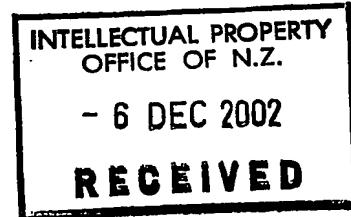


NEW ZEALAND PATENTS ACT 1953

PROVISIONAL SPECIFICATION

IMPROVED VEHICLE TRANSPORTER

I, BARRY DOUGLAS ARMOUR, a New Zealand citizen of 1 Bell Crescent, Concord, Dunedin, New Zealand, do hereby declare this invention to be described in the following statement:



IMPROVED VEHICLE TRANSPORTER

Field of the Invention

The invention relates to a vehicle carrier including a truck deck or trailer which may tilt rearwardly to enable vehicles to be loaded and unloaded from the truck deck or trailer.

Although the invention is particularly applicable to trucks having a rear deck or tray, the invention may also be applied to trailers.

Background

Vehicle carriers are known that have a trailer with two separate vehicle carrying decks positioned adjacent one behind the other, at least one of which may tilt toward the ground to load and offload vehicles from the trailer.

Vehicle carriers are also known wherein the trailer comprises at least one deck that is tiltable about a pivot point located behind the wheels of the trailer. Such a trailer is adapted to be tilted and extended toward the ground to enable the loading and unloading of vehicles.

Summary of the Invention

In broad terms, the invention consists in a truck or trailer including: at least one rear deck, which is tiltable about a pivot axis located in front of the rear axle of the truck or trailer; a front chassis part and a back chassis part, the front part including a cab or a trailer hitch and the back part including a chassis supported at least by a rear axle and wheels; and a pivot connection provided between the two chassis' parts such that the chassis' parts can

pivot at opposing angles, the rear chassis tilting rearwardly to enable the loading and unloading of vehicles onto the truck or trailer.

Preferably, the trailer or truck deck is arranged to be tilted by a tilt actuating member such as a hydraulic ram.

Typically, the truck is a two axle truck, including a cab on the front chassis part and having leaf spring rear suspension.

Preferably, the trailer or truck deck has a ramp hingedly attached to its rear to enable ease of loading and unloading of vehicles onto and off the trailer or deck.

Preferably, the ramp is hinged to be folded along its length and supported by a rigid member along the underside of its fold-line.

This invention may also be said to broadly consist in the parts, elements, and features referred to or indicated in the specification, individually or collectively, and any or all combinations of any two or more said parts, elements, or features; and where specific equivalents are mentioned herein, which have known equivalents in the art to which this invention relates, such known equivalents are deemed to be incorporated herein as if individually set forth.

Brief Description of the Drawings

Preferred embodiments of the invention will be described, by way of example only, with reference to the accompanying figures in which:

Figure 1 is a perspective view showing a truck, according to a preferred form of the invention, having a deck upon which a vehicle is positioned for transportation;

Figure 2 is a rear elevation view showing a truck, according to a preferred form of the invention, having a deck in a tilted position for loading and unloading of vehicles onto the truck deck.

Detailed Description of Preferred Forms

While the description of the preferred embodiments below makes reference to a truck having a cab and a deck, it will be appreciated that at least some of the features described will also have application to trailers which are towed by a separate tractor unit.

The preferred form comprises a truck having a cab 1, a deck 2 and at least two pairs of wheels, being front wheels 7 and rear wheels 3. It is envisaged that more wheels will be required for a longer truck. The cab 1 and deck 2 are supported by a chassis made up of two separate chassis parts. The two chassis' parts are pivotally such that front chassis part 5, and therefore the cab 1, are able to tilt forward, whilst the truck deck 2 and its supporting rear chassis part are able to tilt backward simultaneously to a point on or near the ground surface as shown in Figure 2; thus enabling a vehicle 6 to be loaded or unloaded onto or off the truck deck.

The pivot axis between the two chassis parts is located in front of the rear axle that supports rear wheels 3. This enables a relatively shallow angle of incline for vehicles loading and unloading onto and off the truck deck 2.

The truck may use leaf spring rear suspension in a preferred form, although other types of suspension systems may also be used.

The truck deck 2 may have a textured surface to provide grip for the wheels of vehicles being transported. The truck deck 2 may also have rails 11 along its sides to prevent slipping vehicles from falling from the side of the deck 2.

The rails 11 may be provided with apertures 12 through which cables and/or other tie downs, or the like, may be threaded to assist in the securement of transported vehicles. The apertures 12 may be positioned directly adjacent the surface of the deck 2 to provide drainage should the deck be wet.

A ramp 4 may be hingedly attached to the rear of the truck deck and stored in an upright position, similar to that shown in Figure 1, during transport of the vehicle(s) 6. In this position, the ramp 4 is locked in place by bolts, a locking bar, or the like, such that the ramp 4 may serve as a barrier should the rear vehicle 6 break free of its clamps, tie-downs, or other securements, and roll towards the rear of the deck 2.

As shown in Figure 2, the ramp 4 is lowered outwardly to a point on or near the ground surface to provide smooth access for a vehicle 6 being loaded onto the truck deck 2 or offloaded from the deck 2. A rigid supporting member 8 may be positioned along the length of the underside of the ramp 4 to provide additional strength and support. Preferably, the rigid supporting member 8 is permanently mounted on ramp 4.

In an alternative embodiment, the ramp 4 may be hinged along fold-line 9 in addition to being hinged to the rear of the deck 2 along hinge line 10. In this form, the ramp 4 is folded along its fold-line 9 and then raised into the vertical storage position (as shown in Figure 1) where it is locked in place by bolts, a locking bar, or the like. A rigid supporting member 8 is positioned along the underside of the ramp 4 and overlaps the fold-line 9 to provide strength and support and to prevent the fold-line 9 from folding inwards when stressed by a weight such as that imparted from a loading vehicle. Preferably, the rigid supporting member 8 is permanently fixed to the ramp 4 on one side of the fold-line 9.

The ramp 4 may have a textured surface to provide grip and may also include apertures to provide drainage for the deck.

The ramp 4 may be raised and lowered manually or mechanically by motorized means.

During transportation of the vehicle(s) 6, the vehicles are tied down, clamped, or otherwise secured to the truck deck. The ramp 4 is raised to its vertical storage position and the chassis' are returned to their substantially horizontal positions so that the cab 1 and deck 2 return to their horizontal transportation state, as shown in Figure 1.

The tilt positioning of the chassis' may be controlled manually or mechanically by a tilt actuating member such as a hydraulic ram. Alternatively, the tilt positioning of the chassis' may be controlled by motorized or pneumatic means.

Preferred forms of the invention have been described by way of example only and it should be appreciated that modifications and additions thereto may be made without departing from the scope of the invention.

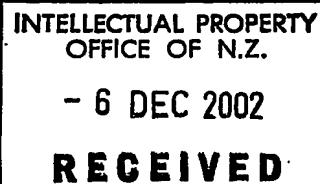


FIGURE 1

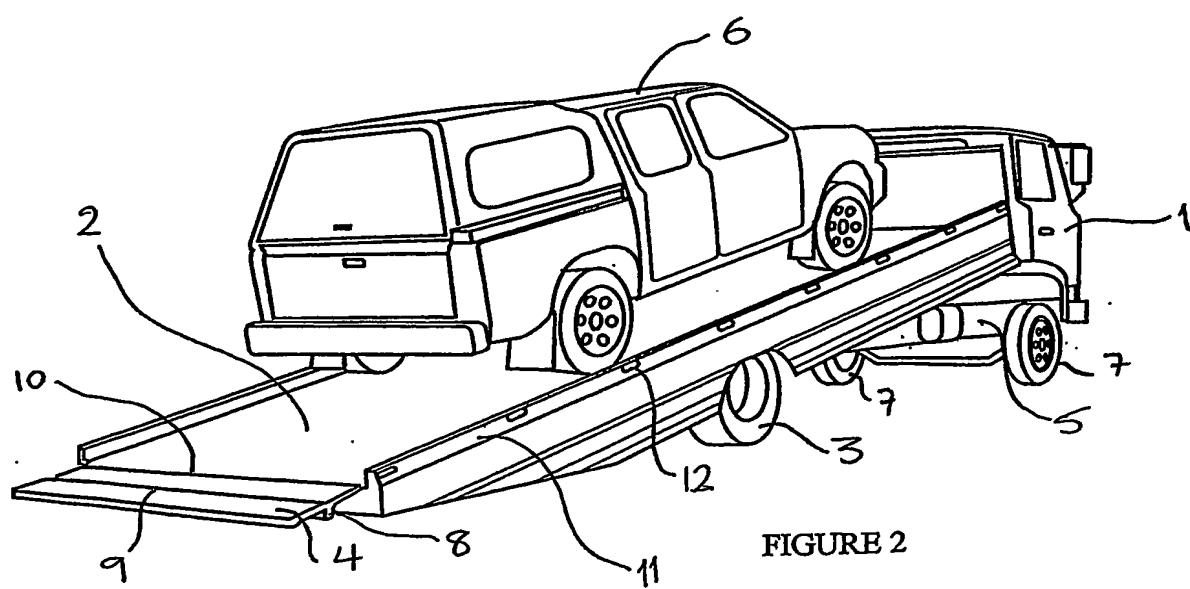
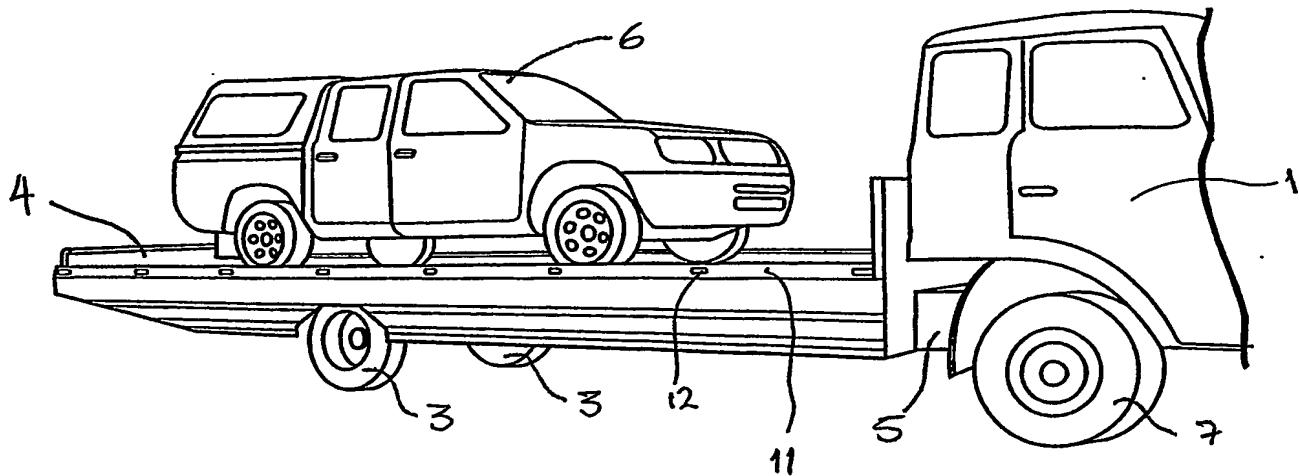


FIGURE 2